BRINGING MORE DAYLIGHT INTO INDUSTRIAL BUILDINGS.

Dr. George M. Price, writing on "The Importance of Light in Factories," in "The Modern Factory," states: "Light is an essential working condition in all industrial establishments, and is also of paramount influence in the preservation of the health of the workers. There is no condition within industrial establishments to which so little attention is given as proper lighting and illumination. Especially is this the case in many of the factories in the United States. A prominent investigator, who had extensive opportunities to make observations of industrial establishments in Europe as well as in America, states: "I have seen so many mills and other works miserably lighted, that bad light is the most conspicuous and general defect of American factory premises."

"My own investigations for the New York State Factory Commission support this view. In these investigations it was found that 36.7% of the laundries inspected, 49.2% of the candy factories, 48.4% of the printing places, 50% of the chemical establishments, were inadequately lighted. There was hardly a trade investigated without finding a large number of inadequately lighted establishments."

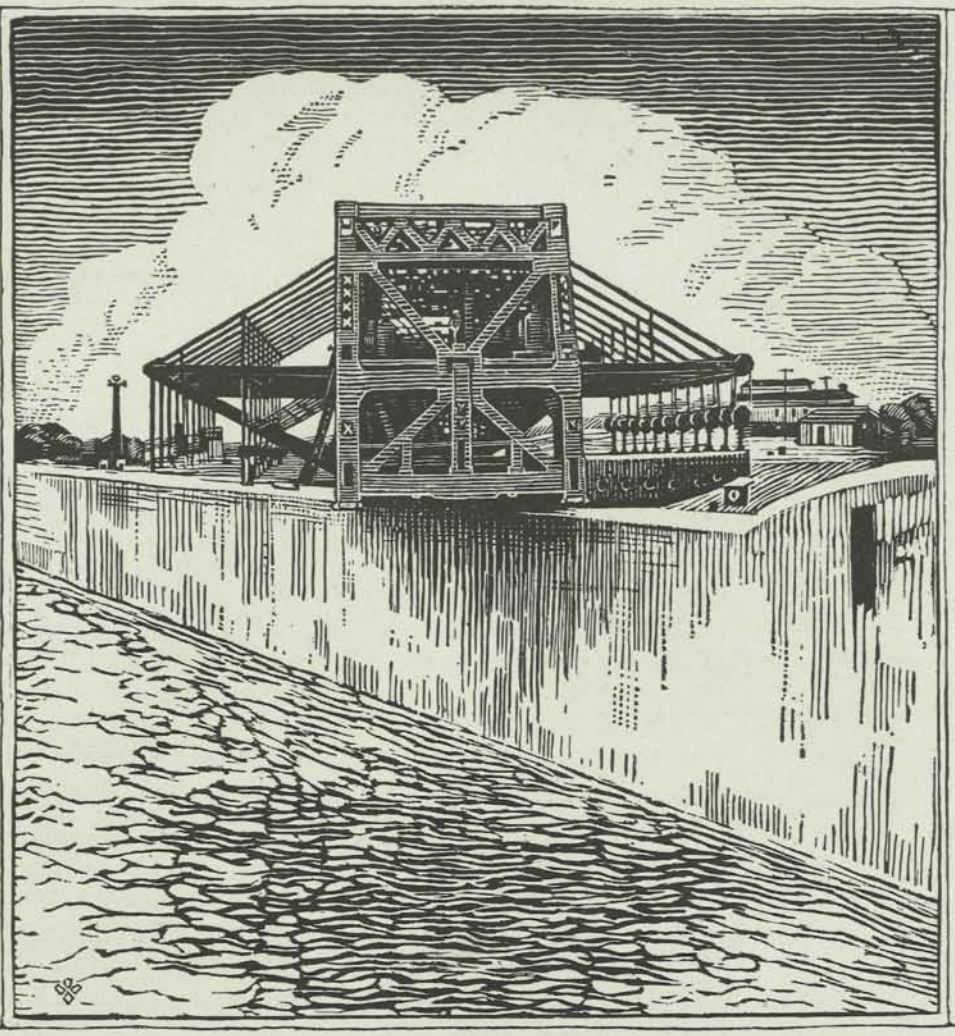
Inadequate and defective lighting of industrial buildings is not confined to the establishments in New York State alone. The same conditions prevail in most sections of the country.

Such conditions as mentioned above are entirely opposed to the laws of health, sanitation and efficiency. Wherever poor lighting conditions prevail, there must be a corresponding loss of efficiency and output both in quality and in quantity. American industry is not using nearly enough daylight and sunlight in its buildings. Every endeavor should be made to use as much as possible of daylight for lighting purposes. To obtain this it is of course necessary that the rays of daylight and sunlight are permitted to enter the interior of the buildings as freely as possible, with the important modification that the direct rays of the sun must be properly diffused to prevent glare and eyestrain. A glass especially made for this purpose is known as Factrolite, and is recommended for the windows of industrial plants. Windows should be kept clean if the maximum amount of daylight is to pass through the glass, but the effort will be well repaid by the benefits secured.

In the presence of poor lighting, we cannot expect men to work with the same enthusiasm as when a well lighted working place has been provided. The physical surroundings have a deep effect upon the sentiments of the employes, and where bad working conditions are allowed to prevail, there is invariably a lessening of morale and satisfaction created thereby. Neglecting to utilize what nature has so bounteously provided, daylight, and which is so essential toward industrial efficiency, we have an instance of wastefulness, but now that the importance of good lighting is becoming recognized, undoubtedly more attention will be given by progressive industrial employers to furnishing the means which are essential for their workers to secure and maintain the efficiency, which counts for so much in the success of any industrial concern in this competitive age.

If you are interested in the distribution of light through Factrolite, we will send you a copy of Laboratory Report—"Factrolited."

MISSISSIPPI WIRE GLASS CO.,
220 Fifth Avenue,
St. Louis. New York. Chicago.



The WORLD'S WORD for ELEVATOR SAFETY

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PANAMA CANAL EMERGENCY DAMS

GATUN LAKE, eighty-five feet above sea level, is the reservoir holding the water to feed the Gatun Locks (which lead to the Atlantic) and the Miraflores and Pedro Miguel locks on the Pacific end of the canal.

Every ship going through the canal in either direction uses the water from Gatun Lake to lift it from the one ocean and lower it into the other. Should some accident destroy a lock, the weight of the water released might force down the others and cause tremendous damage and, by lowering the level of the lake, make the canal inoperative until rain had refilled the lake.

Therefore these big emergency dams were constructed. Normally they are not used. In emergencies they would be swung over the locks, the gates would drop into position and effectually dam the opening.

Otis engineers designed, constructed and installed the machinery for operating six of these gigantic dams. It is a feat typical of the world-wide scope of Otis activities in engineering and the vertical transportation of men and materials.

Most of the famous buildings of the world
are equipped with Otis Elevators.

OTIS ELEVATOR COMPANY

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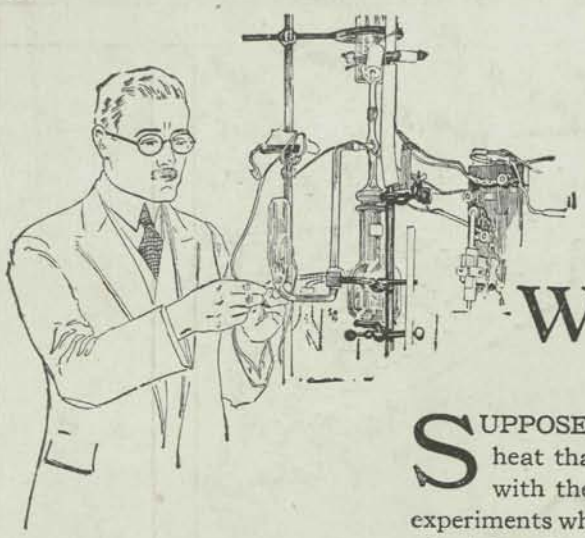

What Is Research?

SUPPOSE that a stove burns too much coal for the amount of heat that it radiates. The manufacturer hires a man familiar with the principles of combustion and heat radiation to make experiments which will indicate desirable changes in design. The stove selected as the most efficient is the result of research.

Suppose that you want to make a ruby in a factory—not a mere imitation, but a real ruby, indistinguishable by any chemical or physical test from the natural stone. You begin by analyzing rubies chemically and physically. Then you try to make rubies just as nature did, with the same chemicals and under similar conditions. Your rubies are the result of research—research of a different type from that required to improve the stove.

Suppose, as you melted up your chemicals to produce rubies and experimented with high temperatures, you began to wonder how hot the earth must have been millions of years ago when rubies were first crystallized, and what were the forces at play that made this planet what it is. You begin an investigation that leads you far from rubies and causes you to formulate theories to explain how the earth, and, for that matter, how the whole solar system was created. That would be research of a still different type—pioneering into the unknown to satisfy an insatiable curiosity.

Research of all three types is conducted in the Laboratories of the General Electric Company. But it is the third type of research—pioneering into the unknown—that means most, in the long run, even though it is undertaken with no practical benefit in view.

At the present time, for example, the Research Laboratories of the General Electric Company are exploring matter with X-rays in order to discover not only how the atoms in different substances are arranged but how the atoms themselves are built up. The more you know about a substance, the more you can do with it. Some day this X-ray work will enable scientists to answer more definitely than they can now the question: Why is iron magnetic? And then the electrical industry will take a great step forward, and more real progress will be made in five years than can be made in a century of experimenting with existing electrical apparatus.

You can add wings and stories to an old house. But to build a new house, you must begin with the foundation.

General Electric Company

General Office Schenectady, N. Y.

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